

REHAB 2019

**Proceedings of the
4th International Conference
on Preservation, Maintenance and Rehabilitation
of Historic Buildings and Structures**



Edited by

**Rogério Amoêda
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Portuguese state-subsidized housing projects from the 1970s. Recent interventions in the apartments of *Torres Vermelhas da Pasteleira* (Porto)

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ABSTRACT: In Portugal, although the single-family housing model remained the preference for most state-provided housing initiatives until very late in the 20th century, in the 1940s it became obvious that this model would be unable to solve the housing deficit. Between the 1920s and the late 1970s, this situation brought about the emergence of multiple types of multifamily housing buildings, carried out by different types of developers, such as private, real estate, and public and cooperative housing initiatives, these latter being more constrained at an economic level.

State-subsidized multifamily buildings changed public housing in many respects: in the architectural language (introducing modern elements, concepts and approaches to design), in the urban concepts (compliance with the Athens Charter and, therefore, introducing communal green spaces), in the infrastructure of housing buildings (including well-equipped service areas, full bathrooms and an independent living room), and, no less important, in the social model arising from these urban arrangements.

This paper proposes an analysis of the *Torres Vermelhas da Pasteleira* housing complex (1966-1972) in Porto, a state-funded project included in the plan for the *Pasteleira* area. This neighbourhood was built under the “Affordable Rent Houses Programme” (Law 2007, 7 May 1945), implemented via the “Affordable Houses – Federation of Provident Funds” (*Casas de Renda Económica - CRE, Habitações Económicas/Federação de Caixas de Previdência - HE/FCP*).

The main objective of this study is to compare the various interventions in the apartments. In addition to reflecting on the adaptability of this building to the current requirements of contemporary dwellings, this study aims to provide an overview of the transformation of the building units, regarding the shift of the type of property which occurred in the late 1970s.

Although not referring to a particular historic structure, it is believed that this set of buildings represents modern heritage, which in many ways triggers the need for reasoned consideration on strategies for valorisation, rehabilitation or reuse as well as an analysis of the buildings’ adaptability to the requirements of contemporary living.

The proposed paper is an extension of the research project entitled “Mapping Public Housing: A critical review of the State-subsidized residential architecture in Portugal (1910-1974)” [P2020-PTDC/CPC-HAT/1688/2014, a project co-financed by ERDF and FCT]. This project focused on the role of the state as a provider of housing, and its aim is to identify public programmes and their spatial concretisations, with a view to the development of a common ground for upholding decisions.

This paper is a revised and extended version of *Adaptação e transformação na habitação apoiada pelo Estado no século XX. As “Torres Vermelhas” da Pasteleira enquanto laboratório*, presented at CREPAT – Congresso da reabilitação do património, Universidade de Aveiro, Departamento de Engenharia Civil (2017).

1. INTRODUCTION.

This article is part of the research project “Mapping Public Housing: A critical review of the State-subsidized residential architecture in Portugal (1910-1974)” [P2020-PTDC/CPC-HAT/1688/2014], the main objective of which is to deepen the discussion on the role of the state in solving the problem of housing for the disadvantaged classes in Portugal. During the first three quarters of the 20th century, various housing programmes were implemented, aiming at different sorts of inhabitants and housing needs, such as the “Affordable Houses Programme” (Decree 23 052, 23 September 1933);¹ the “Houses for Poor Families Programme” (Decree-law 34 486, 6 April 1945); the “Affordable Rent Houses Programme” (Law 2007, 7 May 1945),² the “Houses with Controlled Rent Programme” (Decree-law 36 212, 7 April 1947); the Houses built under the Improvement Plan for the City of Porto (Decree-law 40616, 28 May 1956), among others.

The *Pasteleira* plan³ began in 1956 and was developed by the Porto City Council via a design by the architect Alberto Rosmarinho (Pimenta, 2013: 66). This plan provided for the organization of the territory into two nuclei – North and South – with different sizes and characteristics. The North nucleus consists of one of the neighbourhoods of the Improvement Plan for the City of Porto (1956-1973), the *Pasteleira* neighbourhood, which had as its objective the relocation of families from the *ilhas*, providing housing for low-income tenants. The South nucleus includes two sectors – West and East – with the West being the housing complex of *Torres Vermelhas* and the East intended for private investment, without previous definition of the type of buildings. This plan introduced a new city model, suggesting influences from the ideologies seen in the Charter of Athens.

This article focuses specifically on the *Torres Vermelhas da Pasteleira* housing complex, the project of which dates from 1966, and on which the construction began in 1972. The architectural project of the six towers of fourteen floors, with apartments with three- and four-bedrooms typologies, is attributed to the architects João Serôdio (1932-), Luís Almeida D'Eça (1921-2011) and Rui Paixão (1932-) (Pimenta, 2013: 59). These towers were built with financing from the “Affordable Houses”, a division of the Federation of Provident Funds (1947-72), within the framework of the “Affordable Rent Houses Programme”.⁴ This housing programme was based on a specific regulation framework, namely Law 2007, dated 7 May 1945, followed by decree-law 35 611, dated 25 April 1946, Law 2092, dated 9 April 1958 and decree-law 419, dated 4 October 1977.

According to Law 2007, the “Affordable Rent Houses” constructed in urban or industrial centres should have direct access to each dwelling and have a maximum of four floors, among other specifications relating to hygiene conditions, water distribution systems or areas of interior spaces. The government could authorise the construction of taller buildings (blocks) but only in exceptional cases. This regulation sought to promote the construction of affordable housing to be rented or sold to middle-class families. Also, it enabled social security institutions to participate. Therefore, decree-law 35 611 mainly provided an impetus to the implementation of the previously defined plan, with specific conditions related to investment by social security institutions for the construction of “Affordable Houses”, “Affordable Rent Houses” and “Low-income buildings”. The framework allowing institutions to cooperate was expanded by Law 2092, namely with respect to the construction (for rent or transfer) of “Affordable Houses”, “Affordable Rent Houses” and “Rent-Free Houses” and to the granting of loans for the construction or improvement of residents’ own housing. Decree-law 419 of 1977, allows the “Affordable Rent Houses” to be sold to their respective tenants.

The neighbourhoods built under the “Affordable Rent Houses Programme” constitute a significant turning point with respect to public housing by offering the opportunity to introduce multi-family buildings. This ‘political’ change allowed for the introduction of new city models and urban arrangements in alignment with the precepts of the Charter of Athens and the desire to experiment with different architectural languages. Relevant transformations can also be seen in the design of the typologies, increasingly involved with the ideals underlying a ‘minimum dwelling’.

According to article 6 of decree-law 35 611, the “construction of affordable rent houses by Social Security institutions will be carried out under the guidance of the Under-Secretariat of the Corporations and Social Security and the municipal councils”.

In addition to the financing through "Pension Funds" accumulated through the contributions made by registered workers, the new legislative framework would allow construction in height, which would mean a change in the current housing models (Pimenta, 2013: 29). Although these buildings were built under a lease, they were later divided into autonomous units, making it possible for the residents to acquire them and facilitating the carrying out of interventions inside the dwellings. This process found legitimacy in a legislative framework in the mid-1970s, namely Decree-Law 41 of 4 October 1977.⁵

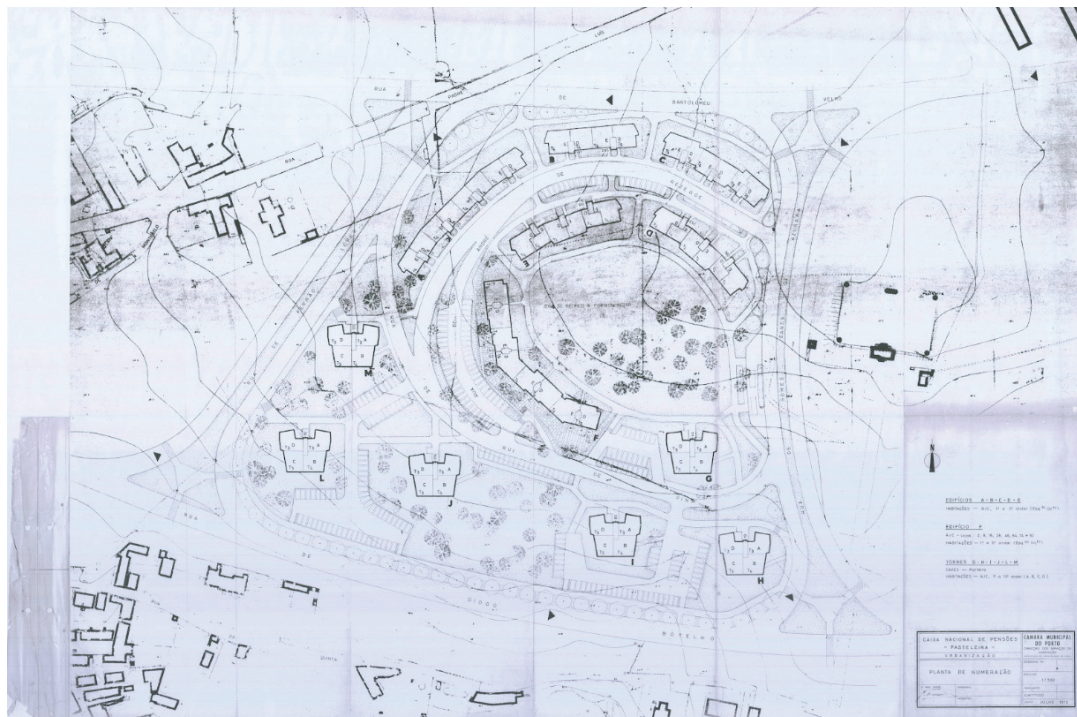


Figure 1. Pasteleira Plan. South Nucleus. ©CMP.

2. ANALYSIS APPROACH

This work analyses the transformations identified in the apartments through the systematization of the data collected in situ and compares the project initially built with the existing one. The aim is to measure tolerance to the change in the domestic spaces. The analysis follows a methodology that covers the following fields: **domestic space, components** and **coating materials**.

The analysis of the private space includes the study of the alteration of the uses and the variations in the compartmentalization, namely the introduction of new connections between the existing spaces. The verification of component wear refers to the installation of new infrastructure networks on the interior or exterior of the walls, the partial or complete alteration of the facilities (replacement, suppression or addition) and the restoration, conservation or replacement of the external window frames. The survey of the current condition of the coating materials tries to verify the behaviour of the original materials in resistance and durability and the consequences of the changes regarding the preservation of the authenticity of the domestic space. In this specific topic, different options were considered: keeping the original materials or substituting them with different ones or with similar materials.

3. ARCHITECTURAL LANGUAGE, TYPOLOGIES AND MATERIALITY

The construction of the complex was divided into two phases: the first included the three towers placed in the East area, while the second phase corresponded to the remaining buildings.

The fourteen-storey towers, located in landscaped garden spaces and surrounded by outdoor parking areas, have a semi-open basement for individual storage. On each floor, a central core of

elevators and stairs provides distribution to four apartments: two apartments with a three-bedroom typology and the other two with a four-bedroom typology which results in a symmetrical floor plan.

The spatial distribution of the apartments is notable for the concentration of the service spaces next to the access core and, above all, the central location of the common living room and its relation with the adjacent balcony – covered outdoor space.

The five blocks exclusively reserved for housing, with ground floor and three further floors, present a symmetrical composition plan from a central axis. Each block includes three different units with independent entrances and two dwellings per floor with access through a stairwell.

The sixth block, with six floors, has a distinct functional programme, with commercial spaces on the ground floor and housing on the upper floors. In this case, each floor comprises eight apartments with four or five bedrooms distributed by four central access of with stairs and elevator.

The *Torres Vermelhas da Pasteleira* are also feature a very specific language, namely the exterior coating material in red brick, with the concrete slabs and crowning also visible. The red brick and concrete surfaces give the complex a very specific iconic identity, suggesting influences from the Italian production of the 1960s (the Quartiere INA-Casa *Sant'Agnese*, for example), namely in the ‘organicism’ of the site plan distribution, the volumetric deconstruction of the building’s volume, or the plasticity of the architectural language.



Figure 2. Type floor plan. Case study. ©DGN, IHRU.

4. RECENT INTERVENTIONS IN THE APARTMENTS

The three case studies presented are located in the Eastern tower of the complex, in Rui de Pina Street.

4.1 Apartment 1 (3 bedrooms, typology A, 6th floor)

Apartment 1, located on the 6th floor, was purchased by an architect in 2013 for their own housing. The apartment was in its original state, not having undergone any intervention since its construction, in addition to the closure of the exterior balcony (a frequent alteration throughout the building since its construction) and the application of wallpaper in some rooms. The intervention project here analysed was carried out in 2015 and lasted about four months.

Regarding the spatial organization of the apartment, the intervention obeyed the complete preservation of the original compartmentation, keeping the original uses of each room. Only one

of the bedrooms, the smaller one, was turned into an office. At the component level, the infrastructure networks were revised or replaced, namely the water and sewage network and the electricity and telecommunications network. All sanitary fittings and kitchen equipment were completely replaced. The original exterior wooden window frames were maintained and repaired.

Also, all the original coating materials of the kitchen and sanitary installation were replaced, choosing different options from the originals (marble in the kitchen and ceramic tiles in the bathroom). In the remaining rooms, it was decided to perform a new plaster coating and paint finishing, since the walls were covered with wallpaper. The refurbishment of the apartment also included the execution of general plastering of all walls and new paint. The original wooden floor was kept intact in the entry areas, bedrooms and living room and was entirely varnished. The pavement of the kitchen and bathroom, originally in hydraulic mosaic, was replaced with a self-levelling pavement in grey. In the bathroom, the bidet was removed, and the bathtub was replaced by a shower base.

The intervention comprised the execution of fixed furniture, namely cabinets and kitchen countertops, a bookcase in the entrance, and wardrobes in the hall of the bedrooms and the two larger bedrooms. All original doors were maintained, including the glass. All carpentry, old and new, was painted light grey.



Figure 3. (apartment 1, typology A, 6th floor). Floor plans: original, current and alterations. Scale 1:200



Figure 4. (apartment 1, typology A, 6th floor). Apartment after the intervention (2015)

4.2 Apartment 2 (3 bedrooms transformed into 2 bedrooms, typology A, 13th floor)

Apartment 2, located on the 13th floor of the same tower, was purchased in 2006 for the new owner's residence. The new owner carried out alterations to improve the habitability of the apartment with a low budget, and the refurbishment lasted approximately one month. At the time of purchase, the apartment had already undergone a series of interventions by the previous owners, including the replacement of cabinets, equipment and coatings in the service areas, namely the kitchen and the bathroom. The outside porch was already enclosed with aluminium frames, and the original wooden frame had been removed.

At the level of the distribution of the apartment, the most relevant change was the transformation of the original 3-bedroom unit into a 2-bedroom, increasing the area of one bedroom and the living room area. This intervention presupposed the demolition of a wall and the introduction of zones with a lower false ceiling (in the zone of the enlargement of the room). There was also a regularization of ceiling height through the introduction of false ceilings in the living room and the balcony, in order to generate spatial continuity. At the level of the components, the infrastructure network was maintained (although with the need for interventions in the bathroom), since it had undergone a previous alteration. In the kitchen, the existing equipment was maintained, while in the bathroom the sanitary equipment was completely replaced, positioned in the same location as the pre-existing ones (while removing the bidet).

The exterior window frames (made of riga wood) did not undergo any intervention. In the kitchen, the existing coatings were kept on the walls, although they were painted.

In the bathroom, the existing coating materials were replaced with new ceramic material, both on the walls and on the floor. A maintenance treatment was carried out on the wooden block floor covering of the living room, bedrooms and corridors. A set of fixed cabinets and shelves were integrated into the apartment, namely in the entrance area (in an existing niche) and in the corridor of the rooms, and a closet wardrobe was installed in the largest bedroom.

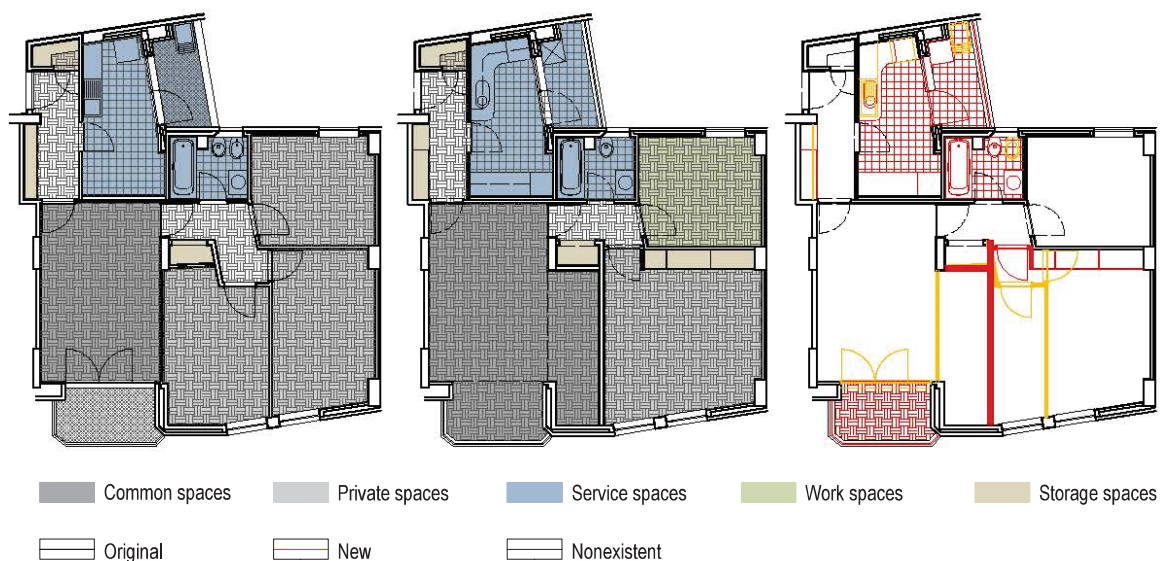


Figure 5. (apartment 2, typology A, 13th floor). Floor plans: original, current and alterations. Scale 1:200



Figure 6. (apartment 2, typology A, 13th floor). Apartment after the intervention (2006)

4.3 Apartment 3 (4 bedrooms transformed into 2 bedrooms, typology B, 4th floor)

Apartment 3, located on the 4th floor, is inhabited by a couple who have occupied it since the construction of the towers, having acquired the property in the mid-1970s. A series of improvements were made in the 1990s.

Regarding the spatial organization of the apartment, changes can be observed in the enlargement of the living room by the annexation of an adjacent bedroom, opening a gap for direct access. The access door of this bedroom through the hall of the bedrooms has been transformed into a closet with shelves. Nowadays, as only one couple lives permanently in this apartment, two of the bedrooms are used as a support room for handling clothes and a bedroom for visitors. The exterior porch was also integrated into the living room, closing the exterior spans through aluminium frames and levelling the floors. The outside balcony associated with one of the bedrooms and the laundry room were also enclosed with aluminium frames.

The infrastructure networks (water system, sewage and electricity) were reviewed and modernized. All kitchen equipment and toilets were completely replaced. In the case of the bathrooms, the pieces were repositioned in the largest one (washbasin and toilet). In the kitchen, new cabinets and equipment were installed, changing the area of the pantry (via the placement of a cabinet).

The exterior wooden window frames in riga wood were completely replaced by brown, thermal PVC frames, reproduced with a design similar to the originals. The inner frame between the kitchen and the laundry room (original in wood – now in aluminium) was also replaced. Regarding the coating materials of the apartment it is possible to highlight: the complete alteration of the materials (floors and walls) in the kitchen and bathrooms; the partial alteration of the floor of the living room balcony; the complete alteration of the floor and partial walls of the laundry; the alteration of the floor of the entrance hall; the general painting of all interior walls.



Figure 7. (apartment 3, typology B, 4th floor). Floor plans: original, current and alterations. Scale 1:250



Figure 8. (apartment 3, typology B, 4th floor). Apartment after the intervention (2017)

5. CONSIDERATIONS

The new urban approaches' 'rational urbanisation plans/densification through residential parks'

In most residential solutions associated with state-subsidized housing programmes implemented until the late 1960s, we can observe the renewal of the instituted patterns associated with the promotion of public housing carried out through collective housing. The experimentation clearly focused on the language of the building and the introduction of new typological models. The housing programme was fully reviewed through engagement with international references, namely with those most associated with the Modern Movement paradigm. The degree of innovation or the overall architectural quality of the built examples is quite remarkable in some solutions found in the 'Affordable Rent Houses Programme' which bring tradition and modernity together, or more radical examples fully committed to the Modern Movement's ideals, either in terms of urban concept, architecture language or typology design.

Contemporary approaches and interventions: adaptation and transformation of the apartments

The present analysis made it possible to identify variations in use and partitioning, installation of new infrastructural networks, alteration of equipment, replacement of window frames or changes in coating materials. In its genesis as a project for affordable rent housing, the restrictions on the level of the apartment area are particularly evident (around 90 square meters regarding the 3-bedroom units) and clearly generated the need for transformation over time.

The main spatial changes in the three case studies analysed are related to the resizing of social spaces, the multifunctionality of rooms and the reorganization of service spaces. The reduced areas of the apartments also generated generalized interventions such as closing external balconies, both the balcony connected to the living room and the one placed in the laundry area. The room tends to be increased by the occasional or integral connection with the adjacent space, and the bedrooms acquire multiple functions (e.g., storage, work). This particular transformation is carried out with relative simplicity, by the partial demolition of a wall, or the simple opening of a communication gap. The service spaces are the areas of most significant wear over time, and in that sense the ones that underwent the most significant transformation, both by the complete replacement of the equipment as well as the infrastructures and coating materials. The type and quality of the materials used at the time of construction, consistent with a contained investment, determined the near impossibility of their maintenance in all case studies analysed. However, despite the diversity of intervention measures identified, the most prominent finding is that the apartments, despite their small size, are easily adaptable to the needs of the new owners, both in terms of distribution and size of rooms, and comfort and modernization.

This manifold adaptability is based on the original spatial design of the apartments: the relative non-differentiation of the rooms, which allows an easy change of occupation; the distribution of

rooms side by side, enhancing the possibility of joining divisions; the location of service areas (kitchen and bathrooms) in a peripheral band that does not interfere with future transformations. By contrast, the lack of planning in the interventions in the envelope of the building has consequences regarding the coherence of the architectural language of the façades. This finding can be seen in the diversity of external window frames resulting from the replacement of the original ones and the closure of the balconies.

In this sense, the general view is that, despite the type and size, or even the depth of the interventions undertaken by the current owners, the architectural quality of the initial design of the *Torres Vermelhas da Pasteleira*, especially at the level of the spatial design of the apartments, allows continuous updating. However, the determination of criteria in the intervention on the external envelope or in the common areas can contribute to maintaining the identity of the whole residential complex.

From the valorisation/preservation point of view, the strategies to approach these multifamily housing sets could well benefit from a closer involvement from the Municipalities in terms of financial support. Another main initiative is directed to raising both the residents' and the experts' awareness of the importance of recent architectural heritage such as the *Torres Vermelhas da Pasteleira*. In this context, the database developed by the research project 'Mapping Public Housing' [https://db.up.pt/fmi/webd/mapa_habitacao_db] is an essential instrument for identifying and geo-referencing the housing programmes and their respective initiatives. This online platform gathers the process documents (memoirs, reports and assessment procedures, etc.), bibliography and photographic references, as well as the legal framework for each operation/estate/building.

ENDNOTES

¹ Specifically, on the "Affordable Houses Programme", cf. Ramos, Silva (2014); Silva, Ramos (2015).

² On the "Affordable Rent Houses Programme", cf. Tavares (2013, 2015).

³ On the Plan of *Pasteleira*, cf. Gonçalves (2007), Ramos (2001).

⁴ Casas de Renda Económica [CRE]. Lei 2007, de 7 de maio de 1945, programa implementado via Habitações Económicas/Federação de Caixas de Previdência [HE/FCP]

⁵ "1 - Many of the families that live in affordable rent houses built by the Social Security have, over the years, come to claim the transformation of these houses into horizontal property with a view to their acquisition, invoking the right that is conferred by base VIII of Law 2092 of April 9, 1958."

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